

METHODS AND APPARATUS FOR VIBRATION AND BUFFET SUPPRESSION

ABSTRACT OF THE DISCLOSURE

5 Apparatus and methods for hybrid actuation and suppressing vibration are disclosed.
In one embodiment, a hybrid actuator includes a first actuator and a second actuator linked to
move a component a combined actuation distance. The first actuator may include a hydraulic
piston, and the second actuator may include a piezo-electric actuator. In another
embodiment, the first actuator is activated within a first frequency range, and the second
10 actuator is activated within a second frequency range. In another aspect, a method is
provided combining a first actuation movement and a second actuation movement. In
another embodiment, a system is provided for suppressing movement of a component
including a combination of actuators. In a further embodiment, an aircraft is provided with
hybrid motion suppression including a first actuator and a second actuator linked to activate a
15 control surface.